steady.exe Exercises for Chapter steady

Exercise steady.hypnomancy

If a control system responds to a command $r(t) = 1$ such that its output $y(t)$ quickly settles near 0.95, what can be said about the control system's **stability**, **steady-state response**, and **transient response**?

Root locus analysis

The **root locus** is a graphical technique for designing for closed-loop transient response from open-loop knowledge—and some cleverness.[1] A system's transient response is dominated by its poles. For a system with feedback, solving for these closed-loop poles is challenging, as we will see in Lec. rlocus.def.

Due to the use of complex analysis in this chapter, it is recommended that the reader review Appendix A.01 before proceeding.

root locus

1. The root locus technique was developed by Evans. (W. R. Evans. ?Control System Synthesis by Root Locus Method? *inTransactions of the American Institute of Electrical Engineers*: 69.1 [*january* 1950], *pages* 66–69. ISSN: 0096-3860. DOI: 10.1109/T-AIEE.1950.5060121)